

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-25 (Cancelled)

26. (New) In a fuel injection system for internal combustion engines, having a fuel injector (1) that can be supplied from a high-pressure fuel source (2, 81), in which between an injection valve (6) and the high-pressure fuel source (2, 81) a pressure booster (5) is disposed that has a booster piston (12), which separates a pressure chamber (11), which can be connected to the high-pressure fuel source (2, 81), from a high-pressure chamber (20) acting upon a nozzle chamber (29) of the fuel injector (1), a differential pressure chamber (16) of the pressure booster (5) in which a pressure change causes a pressure change in the high-pressure chamber (20), and the injection valve (6) includes a nozzle needle (30), with which injection openings oriented toward a combustion chamber (7) can be opened or closed, the improvement wherein the nozzle needle (30) comprises a first nozzle needle part (31) and a further nozzle needle part (32), the first and further nozzle needle parts being triggerable as a function of pressure to open and close various injection cross sections (42, 43) of an injection nozzle (41), wherein the nozzle needle parts (31, 32) of the nozzle needle (30) are guided one inside the other, and wherein the first nozzle needle part (31) and the second nozzle needle part (32) can be acted upon with fuel pressure counter to the action of closing springs (38, 39) via a first nozzle control chamber (82) that can be acted upon with fuel pressure with the interposition of a throttle restriction (85).

27. (New) The fuel injection system of claim 26, wherein the nozzle needle parts (31, 32) of the nozzle needle (30) have surface areas (35, 40) that make a hydraulic pressure actuation possible.

28. (New) The fuel injection system of claim 27, wherein the first nozzle needle part (31) includes a pressure shoulder (35), which is actuatable via the fuel, at high pressure, entering a nozzle chamber (29).

29. (New) The fuel injection system of claim 27, wherein the second nozzle needle part (32) includes a pressure shoulder (40), which is disposed on its end toward the combustion chamber.

30. (New) The fuel injection system of claim 27, further comprising a hydraulic chamber that, via a pressure shoulder (40) actuates the second nozzle needle part (32), is defined by an end face (45) of the first nozzle needle part (31) and a nozzle body face (44) toward the combustion chamber.

31. (New) The fuel injection system of claim 30, wherein the nozzle body face (44) toward the combustion chamber is embodied conically.

32. (New) The fuel injection system of claim 30, wherein the hydraulic chamber surrounds the pressure shoulder (40) of the second nozzle needle part (32) and is acted upon by fuel from the nozzle chamber (29) via an annular gap (50) when the first nozzle needle part (31) is actuated in the opening direction.

33. (New) The fuel injection system of claim 26, further comprising stroke-limiting stops (33, 34) disposed in a closing chamber (21), the stops (33, 34) being associated with the first nozzle needle part (31) and the second nozzle needle part (32), and wherein at least one of the nozzle needle parts (31, 32) is acted upon a closing spring element (38, 39).

34. (New) The fuel injection system of claim 26, wherein the first nozzle needle part (31) opens and closes a first injection cross section (42), and the second nozzle needle part (32) opens and closes a second injection cross section (43).

35. (New) The fuel injection system of claim 34, wherein, after the opening of the first injection cross section (42) by the first nozzle needle part (31) upon pressure-dependent actuation of the second nozzle needle part (32), the second injection cross section (43) is opened in addition to the first injection cross section (42).

36. (New) The fuel injection system of claim 34, wherein the first and second injection cross sections (42, 43) are embodied as concentric circles of holes on the end toward the combustion chamber of a nozzle body (44) of the fuel injector (1).

37. (New) The fuel injection system of claim 34, wherein the first nozzle needle part (31) and the second nozzle needle part (32) each have respective leak fuel drainage recesses (46, 48) on their circumference.

38. (New) The fuel injection system of claim 37, wherein the leak fuel drainage recesses (46, 48) communicate via a leak fuel conduit (47) that is provided in one of the nozzle needle parts (31, 32) and discharge into a leak fuel line (49) toward the housing.

39. (New) The fuel injection system of claim 26, wherein the pressure-booster (5) comprises a pressure chamber (11), which is acted upon via a line (4) from the high-pressure fuel source (2, 81), a differential pressure chamber (16) which is in communication with the high-pressure fuel source (2, 81) via a magnet valve (8) in lines (18, 19), and a high-pressure chamber (20), which subjects a nozzle chamber (29), surrounding the coaxial nozzle needle (30), to high pressure.

40. (New) The fuel injection system of claim 39, wherein the differential pressure chamber (16) of the pressure booster (5) communicates with a closing chamber (21) of the injection valve (6).

41. (New) The fuel injection system of claim 39, wherein the closing chamber (21) of the injection valve (6) is acted directly upon by pressure from the high-pressure fuel source (2, 81) via a line (4, 60).

42. (New) The fuel injection system of claim 40, wherein the closing chamber (21) of the injection valve (6) is acted upon by pressure through a line (25) parallel to a line (22) from the differential pressure chamber (16) or parallel to a line (60) from the high-pressure fuel source (2, 81), the line (25) including a check valve/throttle restriction (24) and being supplied from the high-pressure chamber (20).

43. (New) The fuel injection system of claim 26, wherein the differential pressure chamber (16) of the pressure booster (5) communicates with a closing chamber (21) of the injection valve (6), wherein the closing chamber (21) of the injection valve (6) is acted upon by pressure through a line (25) parallel to a line (22) from the differential pressure chamber (16) or parallel to a line (60) from the high-pressure fuel source (2, 81), the line (25) including a check valve/throttle restriction (24) and being supplied from the high-pressure chamber (20) and wherein, when the valve (8) is deactivated, a fluidic communication (4, 18, 19, 22, 60, 23, 85) is established from the high-pressure source (2, 81) to the closing chamber (21, 82).

44. (New) The fuel injection system of claim 26, wherein the differential pressure chamber (16) of the pressure booster (5) communicates with a closing chamber (21) of the injection valve (6), wherein the closing chamber (21) of the injection valve (6) is acted upon by pressure through a line (25) parallel to a line (22) from the differential pressure chamber (16) or parallel to a line (60) from the high-pressure fuel source (2, 81), the line (25) including a check valve/throttle restriction (24) and being supplied from the high-pressure chamber (20) and wherein, when the valve (8) is deactivated, a fluidic communication (4, 18, 19, 22; 60, 23, 85, 25, 28) is established from the high-pressure source (2) to the nozzle chamber (29).

45. (New) The fuel injection system of claim 30, wherein at least the first nozzle needle part (31) can be acted upon by pressure that can be generated in the closing pressure chamber (21, 82).

46. (New) The fuel injection system of claim 27, wherein independently of said surface areas (35, 40) the second nozzle needle part (32) can be actuated via a pressure relief of a second nozzle control chamber (83).

47. (New) The fuel injection system of claim 46, wherein the second nozzle control chamber (83) is sealed off from the nozzle control chamber (82) by a sleevelike body (89).

48. (New) The fuel injection system of claim 46, wherein the second nozzle needle part (32) comprises a longitudinal conduit (84), by way of which reference leakage is diverted into the second nozzle control chamber (83) and a relief line (88).

49. (New) The fuel injection system of claim 47, wherein the reference leakage flows away into the nozzle control chamber (83) between the first and second needle parts (31, 32) via the longitudinal conduit (84) between the sleevelike body (89) and the inner needle part (32).